DESIGN DATA NEWS

1961 Design Data Cross-Index

	Issue	Page
Acceleration, Torque—Angular	Aug. 18	86
Air, and Other Gases, Specifying Purity of	Oct. 13	88
Alloys, Copper, Design Selector Chart	June 5	64
Average Volume of a Cylinder Inscribed in a Right Circular Cone	Nov. 24	64
Axial, Buckling Loads, Critical, on Columns	Dec. 8	76
Balls, Steel, Crushing Strength of	June 19	98
Basic Gas Equations, Nomogram for	Apr. 24	64
Beam Deflection	Nov. 10	90
Beam on an Elastic Foundation	Oct. 27	70
Beam, Fixed, Indeterminate—Allowable Reaction	Dec. 8	79
Beam Selection	June 5	68
Bearing, Plain, Design Check	Feb. 13	122
Bending Stress in a Leaf Spring	Sept. 15	97
Bending Stress in a Loaded Ring	Oct. 13	85
Bevel Gearing	Jan. 2	49
Buckling Factor, Elastic	May 8	134
Channels, Irregularly Shaped, Flow in Pipes and	Feb. 13	116
Chart, Design Selector for Copper Alloys	June 5	64
Circle, Nomogram for Properties of the	Jan. 16	102
Circuits, Hydraulic, Graphic Solution for	Feb. 13	118
Circular Equivalent of a Rectangular Duct	Apr. 10	127
Columns, Critical Axial Buckling Load on	Dec. 8	76
Conduction, Heat	Feb. 27	65
Cone, Circular, Average Volume of a Cylinder Inscribed in a	Nov. 24	64
Cone Frustum, Volume and Inertias of the	Dec. 8	80
Contact Stresses	Jan. 2	42
Continuous Beams, Shear and Moment Coefficients for	Mar. 13	114
Conversion Chart for Vibration Velocity Level and Vibration Acceleration Level	Jan. 2	48
Conversion Table, International Standard Prefixes	Sept. 1	41

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Torrington makes *every* basic type of anti-friction bearing . . . can advise you *impartially* on the best bearing for *your* application. Needle, roller or ball . . . you won't find finer bearings than Torrington. Specify with confidence. If you have a bearing problem, call or write us today. Send for catalog information.

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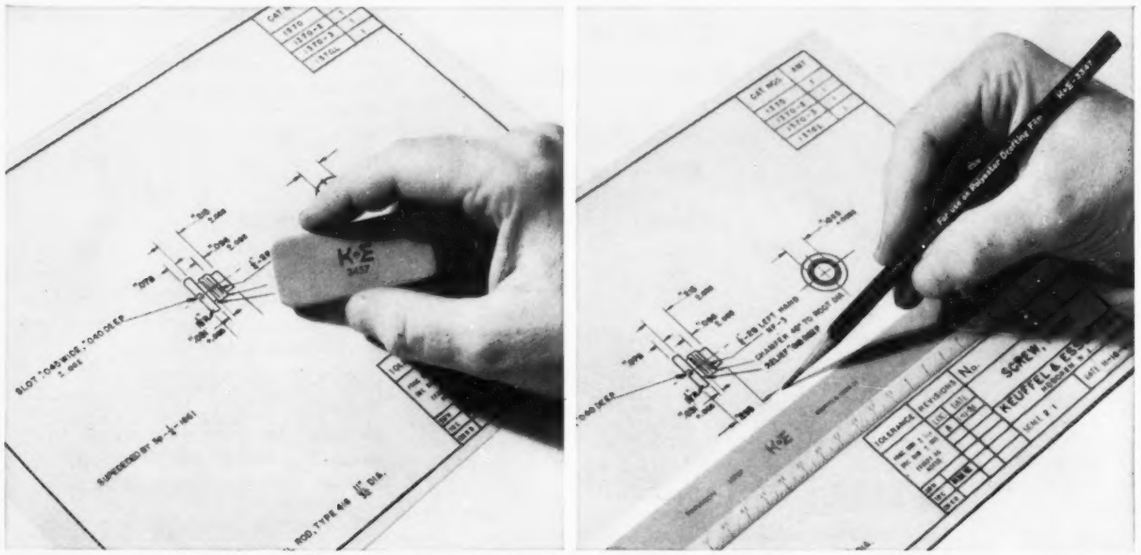

PHOTACT® by K&E

To perfect an engineering drawing requires constant revision, addition and change. Yet most photographic polyester films on the market today reflect a disregard for this fact by combining photo emulsion and drafting surface in a single surface layer. If you mechanically erase image lines on these films the drafting surface is removed, and pencil or ink will no longer take on the film surface. The only alternative is to use eradicators, a time-wasting, nerve-frazzling process.

Only PHOTACT Polyester Films have an additional drafting surface *beneath* the photo emulsion. No eradicators needed. Repeated erasures easily made. In short, the answer to a draftsman's prayers.

Erase cleanly. Using a mildly abrasive Van Dyke eraser (K&E 3457) image lines can be whisked off completely in nothing flat. Even tight, detail lines which are too tightly arranged for eradicators can be removed with a stick-pencil eraser.

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Get Perfect Duplicates and Prints. The PHOTACT emulsion yields solid blacks, true to the original drawing with no fill-in or drop-out. Wide exposure latitude almost guarantees that the first exposure is the right one. Prints are developed in regular *paper* developer; high-priced, short-lived litho developers are not necessary.

PHOTACT Polyester Films are available in three basic types—Contact (409) for same-size exposure; Direct Positive (411) for same-size positives from transparent originals; Projection (419) for prints from microfilm negatives.

FREE... New PHOTACT Selection Guide. Just off the press, K&E has available a new guide to the use and selection of PHOTACT materials. It's crammed full of time-saving tips, quick-reference charts and processing hints. Your copy is free for the asking. See your local K&E dealer or fill out and mail the coupon below.

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	Issue	Page
Coordinates of a Point on a Parabolic Curve	Mar. 27	69
Copper Alloys, Design Selector Chart	June 5	64
Correction Factor, Log Mean Temperature Difference	Feb. 27	67
Cover Plates, Fixed Plates, Minimum Required Thickness	Nov. 10	92
Critical Axial Buckling Load on Columns	Dec. 8	76
Crushing Strength of Steel Balls	June 19	98
Cylinder, Average Volume, Inscribed in a Right Circular Cone	Nov. 24	64
Cylindrical Springs, Natural Frequency of	Apr. 24	66
Deflection, Beam	Nov. 10	90
Deflection of Plates	Oct. 27	68
Deflections of Rectangular Retaining Rings	Apr. 10	118
Deflection of Stepped Shafts	Sept. 15	94
Designing Meters for Maximum Reading Efficiency	May 22	67
Design Selector Chart for Copper Alloys	June 5	64
Determining V-Belt Center Distance	July 21	68
Drawing Tangents, An Optical Aid to	Jan. 30	50
Drives, Geneva	Nov. 10	95
Drives, Magnetic	Aug. 4	38
Duct, Circular Equivalent of a Rectangular	Apr. 10	127
Elastic Buckling Factor	May 8	134
Elastic Foundation, Beam on an	Oct. 27	70
Ellipse, Perimeter of an	Mar. 27	66
Ellipsoid, Surface Area of an	Aug. 18	92
Fixed Beam, Indeterminate, Allowable Reaction	Dec. 8	79
Fixed Plate Stress Factor	June 19	95
Fixed Plates and Cover Plates, Minimum Required Thickness	Nov. 10	92
Flexural Strength of Sandwich Panel	Aug. 18	94
Flow Area Equations for Rating Poppet-type Valve Capacity	Jan. 30	46
Flow, Liquid, Rate Conversion Nomogram	Mar. 13	122
Flow in Pipes and Irregularly Shaped Channels	Feb. 13	116
Flywheels, Tensile Stress in Rim of	May 8	128
Force, Wind, against Rectangular Surfaces	Aug. 18	91
Foundation, Elastic, Beam on an	Oct. 27	70
Fundamental Formulas of Transcendental Functions	Feb. 13	121
Gas Equations, Nomogram for Basic	Apr. 24	64
Gases, Specifying Purity of Air and Other	Oct. 13	88
Gearing, Bevel	Jan. 2	49
Gearing Nomenclature	Sept. 1	36
Gears, Helical, Nomogram for Transverse Pressure Angles	Jan. 16	107
Geneva Drives	Nov. 10	95
Graphic Solution for Hydraulic Circuits	Feb. 13	118
Heat Conduction	Feb. 27	65
Heat Loss from Insulated Pipe	July 21	72
Helical Gears, Nomogram for Transverse Pressure Angles	Jan. 16	107
Helical Springs	Sept. 15	92
Hoop Stress in Rotating Rings, Nomogram for	May 22	66
Hose, Nylon, for Pressure Application	Oct. 13	80
Hub, Keyless, Shrink-Fit Chart	Apr. 10	125
Hydraulic Circuits, Graphic Solution for	Feb. 13	118
Impact Loads, Shock Factors for	July 7	36
Indeterminate Fixed Beam—Allowable Reaction	Dec. 8	79
Inertias, and Volume of the Cone Frustum	Dec. 8	80

(Continued on next page)

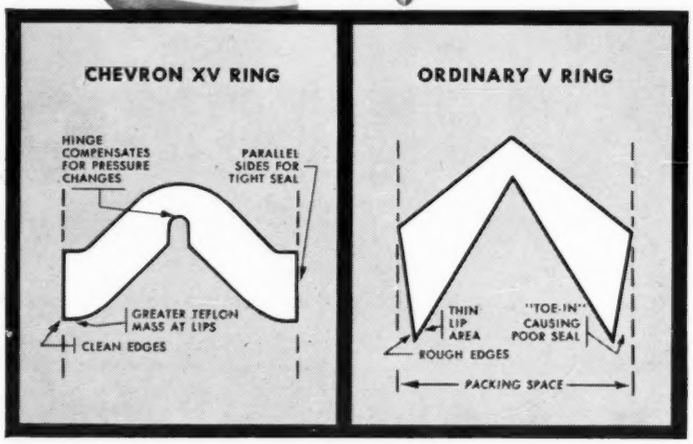
1961 Design Data Cross-Index Cont.

	Issue	Page
International Standard Prefixes Conversion Table	Sept. 1	41
Joints, Shrunk Link—Compressive Stress	July 21	70
Keyless Hub Shrink-Fit Chart	Apr. 10	125
Laplace Transforms Simplified	Aug. 18	87
Leaf Spring, Bending Stress	Sept. 15	97
Linear Springs in Series	July 7	38
Liquid Flow Rate Conversion Nomogram	Mar. 13	122
Liquid Flow through a Sharp Edge Orifice	May 8	132
Log Mean Temperature Difference Correction Factor	Feb. 27	67
Machine Tools, Spindle Speed of	Mar. 13	117
Magnetic Drives	Aug. 4	38
Maximum Force Requirement for Punching of Holes	Feb. 27	64
Maximum Moment—Two Equal, Concentrated, Moving Loads	Oct. 27	66
Meters, Designing for Maximum Reading Efficiency	May 22	67
Moment Coefficients for Continuous Beams, Shear and	Mar. 13	114
Moment, Maximum—Two Equal, Concentrated, Moving Loads	Oct. 27	66
Natural Frequency of Cylindrical Springs	Apr. 24	66
Nomenclature, Gearing	Sept. 1	36
Nomogram for Basic Gas Equations	Apr. 24	64
Nomogram for Hoop Stress in Rotating Rings	May 22	66
Nomogram, Liquid Flow Rate Conversion	Mar. 13	122
Nomogram for Properties of the Circle	Jan. 16	102
Nomogram for Transverse Pressure Angles of Helical Gears	Jan. 16	107
Nomograms for Press Fits Using MoS_2 Lubricant	Mar. 13	119
Nomograms for Venturi-Meter Equation	Nov. 24	60
Normal Stress—Welds	Nov. 24	63
Nylon Hose for Pressure Applications	Oct. 13	80
Oblique Triangles	June 19	97
Optical Aid to Drawing Tangents	Jan. 30	50
Orifice, Liquid Flow through Sharp Edge	May 8	132
Panel, Flexural Strength of Sandwich	Aug. 18	94
Parabolic Curve, Coordinates of a Point	Mar. 27	69
Paraboloids, Surface Area of	Mar. 13	121
Perimeter of an Ellipse	Mar. 27	66
Pipe, Heat Loss from Insulated	July 21	72
Pipe Line Selection	Feb. 27	66
Pipes and Irregularly Shaped Channels, Flow in	Feb. 13	116
Plain Bearing Design Check	Feb. 13	122
Plate, Fixed, Stress Factor	June 19	95
Plates, Deflection of	Oct. 27	68
Plates, Fixed, and Cover Plates, Minimum Required Thickness	Nov. 10	92
Poppet-Type Valve Capacity, Flow Area Equations for Rating	Jan. 30	46
Press Fits Using MoS_2 Lubricant, Nomograms for	Mar. 13	119
Pressure Applications, Nylon Hose for	Oct. 13	80
Properties of the Circle, Nomogram for	Jan. 16	102
Properties of Various Sections	Oct. 13	86
Punching of Holes, Maximum Force Requirement	Feb. 27	64

NEW

GARLOCK CHEVRON* XV TEFLON† PACKING

for Hydraulic, Pneumatic Service



A new high in V-ring performance and efficiency is here from Garlock in the new CHEVRON XV Teflon Packings. Used for valves, pumps and instruments in corrosive service, this exclusive Garlock design has outperformed ordinary Teflon V-rings in rigid controlled tests. CHEVRON XV is superior in flexibility, freedom from friction, wear resistance and sealing efficiency under varying pressures—withstands pressures to 1000 p.s.i. (rings without hinges available for pressures above 1000 p.s.i.).

Can be molded precisely. The greater material mass of CHEVRON XV permits molding to consistent close tolerances ring after ring—batch after batch. Result—perfect fit, clean lips, far better sealing.

Ends frequent gland adjustment. The exclusive CHEVRON hinge compensates for pressure changes automatically. With proper installation, further adjustments are eliminated.

Greatly extends wear. Greater material mass and parallel sides give Garlock CHEVRON XV PACKINGS much more working Teflon than ordinary V-rings. Sturdier size for size, they wear considerably longer . . . yet cost you no more.

Virtually ends friction because of two factors. First, Teflon has the lowest coefficient of breakaway and running friction of any solid material in use today. Second, the exclusive CHEVRON hinge action permits free operation with minimum friction at all pressures.

Learn the full story of this superior new packing. Discuss your particular needs with your Garlock representative. Call him at the nearest of 26 Garlock sales offices and warehouses throughout the U.S. and Canada. Or, write for Catalog AD-192, Garlock Inc., Palmyra, New York.

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Order from the complete line of quality Garlock products . . . Packings, Gaskets, Seals, Molded and Extruded Rubber, Plastic Stock and Parts.

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Compact cartridge pumps provide pressure lubrication at minimum cost

by E. H. Schanzlin
Chief Engineer, Tuthill Pump Company

An opportunity for savings exists in many original equipment applications involving pressure lubrication . . . where, in many instances, foresight on the part of the designer will permit the use of a "cartridge" pump which can be built directly into the equipment . . . to provide the greatest possible capacity per cubic inch of pump . . . and ordinarily at a price below those for comparable pumps . . . since every possible extraneous element has been eliminated from their design.

14 Different Units

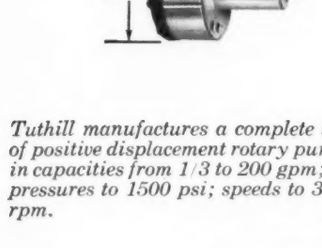
To meet the requirements of these applications Tuthill engineers have developed four different models of cartridge pumps . . . each offered in 3 or 4 sizes for a total of 14 different units . . . for pressures to 200 psi . . . with a capacity range from 56 to 720 gph depending upon pump size and motor speed. These units are all available from stock in any quantity desired. They have been used successfully in many outstanding original equipment applications.

Model LF

Model LF pumps, as shown, have an extremely simple housing and are normally furnished without seals. They are supplied in three sizes with nominal capacities as shown below.

Size	GPH	RPM
00	56	1800
0	105	1800
1	180	1800

(These nominal capacities will also apply to similar sizes of pumps discussed later.)

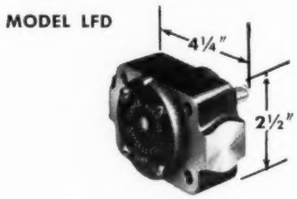


Tuthill manufactures a complete line of positive displacement rotary pumps in capacities from 1/3 to 200 gpm; for pressures to 1500 psi; speeds to 3600 rpm.

Model LF pumps are designed for flange mounting. They offer a choice of internal or external porting. Overall dimensions of these compact units are only 2½" x 4 1/32", and even shorter lengths are possible when pumping conditions permit.

Model LFD

Model LFD cartridge pumps are offered in the same capacity ranges and sizes as model LF. They resemble these basic pumps except that they are provided with a more detailed housing. Model LFD's are designed for flange mounting and normally supplied with either internal porting or ⅜-18 N.P.T. external porting. Shaft seals or ball bearings may also be furnished with these units as an alternate. In the 00, 0, and 1 pump sizes, these units measure 4¼" x 2½" x 3½"

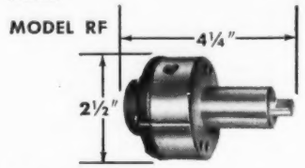


Model LFD pumps are also furnished in pump size 2, with a capacity of 360 gph at 1800 rpm, and 720 gph at 3600 rpm. Overall dimensions are 5⅝" x 3⅞" x 4 13/32".

RF Models

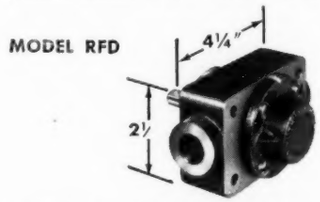
The selection of RF models closely resembles those in the LF range . . . sizes, capacities and general characteristics are identical. However, these units are equipped with Tuthill's special automatic reversing feature which permits driving the pump in either direction without changing the direction of flow . . . with port positions remaining constant . . . without special valving.

The automatic reversing design was developed by Tuthill for applications where the pump must be driven by reversing shafts, or where machinery must be shipped without knowing the ultimate direction of the driving unit. These versatile units have proven their superiority in hundreds of demanding applications.



Model RFD

These units parallel model LFD in capacities, sizes, and general characteristics. Like the model RF above, however, the pumping units have Tuthill's special automatic reversing feature for use with reversing shafts. Dimensions of 00, 0, and 1 sizes are 4¼" x 2½" x 3 29/32". Size 2 pumps measure 5⅝" x 3⅞" x 4 13/32".



Wide Variety of Alternates

In addition to the basic pump models, various alternates can be provided. For example two alternate shaft modifications are offered for maximum adaptability.

Imaginative use of these cartridge pumps may permit significant savings in your designs. In addition to the economical price, their compactness and light weight can eliminate design headaches. These units offer the maximum amount of lubricating capacity for the minimum amount of pump . . . and often at the minimum expenditure of dollars.

For further details write for catalog section 108. Or, send details on your application so Tuthill can offer suggestions on how these units can be incorporated into your design.

PUMPS FOR YOUR PURPOSE
TUTHILL PUMP COMPANY
943 East 95th Street, Chicago 19, Illinois

	Issue	Page
Rectangular Duct, Circular Equivalent of a	Apr. 10	127
Rectangular Retaining Rings, Deflections of	Apr. 10	118
Rectangular Surfaces, Wind Force against	Aug. 18	91
Ring, Bending Stress in a Loaded	Oct. 13	85
Rings, Deflections of Rectangular Retaining	Apr. 10	118
Rings, Rotating, Nomogram for Hoop Stress	May 22	66
Sandwich Panel, Flexural Strength	Aug. 18	94
Sandwich Structures, Thermal Stresses	Mar. 27	68
Sections, Properties of Various	Oct. 13	86
Selection, Pipe Line	Feb. 27	66
Shafts, Stepped, Deflection of	Sept. 15	97
Shear and Moment Coefficients for Continuous Beams	Mar. 13	114
Shock Factors for Impact Loads	July 7	36
Shrink-Fit Chart, Keyless Hub	Apr. 10	125
Shrink Fit, Torque Transmission by Press or	July 21	74
Shrunk Link Joints—Compressive Stress	July 21	70
Specifying Purity of Air and Other Gases	Oct. 13	88
Spheres, Stresses in Thick-Walled	Jan. 16	104
Spindle Speed of Machine Tools	Mar. 13	117
Spring, Leaf, Bending Stress in a	Sept. 15	97
Springs, Cylindrical, Natural Frequency of	Apr. 24	66
Springs, Helical	Sept. 15	92
Springs, Linear, in Series	July 7	38
Springs, Wave	Apr. 10	122
Steel Balls, Crushing Strength of	June 19	98
Stepped Shafts, Deflection of	Sept. 15	97
Stress, Bending, in a Leaf Spring	Sept. 15	97
Stress, Bending, in a Loaded Ring	Oct. 13	85
Stress, Compressive, Shrunk Link Joints	July 21	70
Stress Factor, Fixed Plate	June 19	95
Stress, Tensile, in Rim of Flywheels	May 8	128
Stress, Normal, of Welds	Nov. 24	63
Stresses, Contact	Jan. 2	42
Stresses, Thermal, in Sandwich Structures	Mar. 27	68
Stresses in Thick-Walled Spheres	Jan. 16	104
Structures, Thermal Stresses in Sandwich	Mar. 27	68
Surface Area of an Ellipsoid	Aug. 18	92
Surface Area of Paraboloids	Mar. 13	121
Surfaces, Wind Force against Rectangular	Aug. 18	91
Table, Conversion, International Standard Prefixes	Sept. 1	41
Tangents, An Optical Aid to Drawing	Jan. 30	50
Temperature-Scale Reference Charts	Apr. 24	60
Tensile Stress in Rim of Flywheels	May 8	128
Thermal Stresses in Sandwich Structures	Mar. 27	68
Titanium	Sept. 29	65
Tools, Machine, Spindle Speed of	Mar. 13	117
Torque—Angular Acceleration	Aug. 18	86
Torque Transmission by Press or Shrink Fit	July 21	74
Transcendental Functions, Fundamental Formulas	Feb. 13	121
Transforms, Laplace, Simplified	Aug. 18	87
Transmission, Torque, by Press or Shrink Fit	July 21	74
Transverse Pressure Angles of Helical Gears, Nomogram for	Jan. 16	107
Triangles, Oblique	June 19	97
V-Belt, Determining Center Distances	July 21	68
Valve Capacity, Flow Area Equations for Rating Poppet-Type	Jan. 30	46
Venturi-Meter Equation, Nomograms for	Nov. 24	60
Vibration Acceleration Level, Conversion Chart for Vibration Velocity Level and	Jan. 2	48
Vibration Velocity Level and Vibration Acceleration Level, Conversion Chart for	Jan. 2	48
Volume and Inertias of the Cone Frustum	Dec. 8	80
Wave Springs	Apr. 10	122
Welds, Stress, Normal	Nov. 24	63
Wind Force against Rectangular Surfaces	Aug. 18	91

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